

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-15 (canceled)

Claim 16. (new) A processing agent for processing data at a node in a data network, wherein the data network connects a plurality of nodes and at least a portion of the plurality of the nodes form a multicast group, the processing agent comprising:

a data store that is operable to store a plurality of entries associated with the multicast group, wherein each entry identifies a source that published the entry; and
logic that is operable to disseminate the plurality of entries to members of the multicast group.

Claim 17. (New) The processing agent of Claim 16, further comprising:

logic that is operable to receive, from a node that is not a member of the multicast group, a request to run a query, wherein the query specifies matching criteria;
logic that is operable to run the query against the entries in the data store; and
logic that is operable to disseminate one or more entries that satisfy the matching criteria to the node that is not a member of the multicast group.

Claim 18. (New) The processing agent of Claim 16, further comprising logic that is operable to add a first entry to the plurality of entries in the data store in response to a request from a first node to add the first entry.

Claim 19. (New) The processing agent of Claim 18, wherein the logic that is operable to disseminate is further operable to automatically disseminate the first entry to the plurality of

the nodes that form the multicast group in response to the request from the first node to add the first entry to the plurality of entries.

Claim 20. (New) The processing agent of Claim 16, further comprising logic that deletes a first entry of the plurality of entries in the data store in response to a request from a first node to relinquish the first entry.

Claim 21. (New) The processing agent of Claim 20, further comprising logic that is operable to indicate, to the plurality of the nodes that form the multicast group, that the first entry has been relinquished, wherein the indication is in response to the request from the first node to relinquish the first entry.

Claim 22. (New) The processing agent of Claim 16, wherein the source that published the entry is not a member of the multicast group.

Claim 23. (New) The processing agent of Claim 16, wherein the source that published the entry is a member of the multicast group.

Claim 24. (New) The processing agent of Claim 16, wherein each entry is associated with a priority that specifies its delivery priority relative to other entries.

Claim 25. (New) The processing agent of Claim 16, further comprising logic to indicate that the processing agent has been designated as a rendezvous node in the multicast group, wherein designation as the rendezvous node indicates that the processing agent is to disseminate the plurality of entries to members of the multicast group.

Claim 26. (New) A method for operating a processing agent coupled to a selected node in a data network, wherein the data network connects a plurality of nodes and at least a portion of the plurality of the nodes, including the selected node, form a multicast group, the method comprising steps of:

storing, at the processing agent, a plurality of entries associated with the multicast group, wherein each entry identifies a source that published the entry; and disseminating the plurality of entries to members of the multicast group.

Claim 27. (New) The method of Claim 26, further comprising:

receiving a request from a node that is not member of the multicast group to run a query against the entries stored at the processing agent, wherein the query specifies matching criteria; and

disseminating one or more entries that satisfy the matching criteria to the node that is not member of the multicast group.

Claim 28. (New) The method of Claim 26, further comprising adding a first entry to the plurality of entries stored at the processing agent in response to a request from a first node to add the first entry.

Claim 29. (New) The method of Claim 28, further comprising automatically disseminating the first entry to the plurality of the nodes that form the multicast group in response to the request from the first node to add the first entry.

Claim 30. (New) The method of Claim 26, further comprising deleting a first entry of the plurality of entries stored at the processing agent in response to a request from a first node to relinquish the first entry.

Claim 31. (New) The method of Claim 30, further comprising indicating to the plurality of the nodes that form the multicast group that the first entry of the plurality of entries stored at the processing agent has been relinquished, wherein the indicating is performed in response to the request from the first node to relinquish the first entry.

Claim 32. (New) The method of Claim 26, wherein the source that published the entry is not a member of the multicast group.

Claim 33. (New) The method of Claim 26, wherein the source that published the entry is a member of the multicast group.

Claim 34. (New) The method of Claim 26, wherein each entry is associated with a priority that specifies its delivery priority relative to other entries.

Claim 35. (New) The method of Claim 26, further comprising:
receiving, from a particular node, a request to run a query against the entries stored at the processing agent, wherein the query specifies a source that published one or more entries; and
asynchronously notifying the particular node of a modification to a first entry;
wherein the asynchronously notifying the particular node is performed in response to the source that published the first entry modifying the first entry.

Claim 36. (New) A data network for transmitting data, wherein the data network connects a plurality of nodes and at least a portion of the plurality of the nodes form a multicast group, the data network comprising:

a plurality of processing agents, each of the processing agents comprising:
a data store that is operable to store a plurality of entries associated with the multicast group, wherein each entry identifies a source that published the entry; and
logic that is operable to disseminate the plurality of entries to members of the multicast group.